

**REMARKS**

Claims 1-15 and 17-21 are pending in the present application. No amendments are proposed with this response after final rejection. The Examiner considered the Applicants' previous arguments moot in view of the new grounds of rejection.

**A. Request to Withdraw the Finality of the Office Action dated October 19, 2006**

Applicants request that the Examiner withdraw the finality of the Office Action because an unidentified reference has been applied to the rejection of claim 7 and because a new ground of rejection of claim 8 was made that was not necessitated by Applicants' amendment.

First, the Examiner included an unidentified reference, "Chen et al." in the proposed combination to support the rejection of claim 7. Under 37 C.F.R. 1.104(b) (Nature of examination), "[t]he examiner's action will be complete as to all matters...." The Examiner failed to identify, in the rejection, the relationship or reliance upon "Chen et al." Pursuant to 37 C.F.R. 1.104(d)(1), "[i]f domestic patents are cited by the examiner, their numbers and dates, and the names of the patentees will be stated." The rejection does not state a reliance on Chen et al., yet the supporting description clearly refers to Chen et al. Applicants are, therefore, faced with ambiguity in the rejection, and it is unclear whether Chen et al. is included in the rejection, and if so, what basis the Examiner relies upon for the alleged combination.

Second, in the Response of September 15, 2006, Applicants inserted the phrase "alternating current to direct current" in the preamble of claim 8. The Applicants further replaced two instances of the abbreviation for direct current (i.e. DC) with the phrase "direct current." These clarifying amendments to claim 8 did not change the subject matter claimed. Moreover, the Examiner recognized the subject matter of claim 8 was directed to the field of alternating current to direct current power converters because the Examiner previously cited Wong in the rejections, and Wong is in the field of alternating current to direct current power converters (Wong, Column 1, lines 23-26, Fig. 2). Although no change in the scope of claim 8, the Examiner nonetheless now submits a new ground for rejection.

With respect to the premature finality of the Office Action dated October 19, 2006, MPEP §706.07(a) states, in part:

“Under present practice, second or any subsequent actions on the merits shall be final, **except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims** nor based on information submitted in an information disclosure statement ...” [Emphasis Added.]

Applicants respectfully contend that the amendment did not necessitate the new grounds for rejection and, therefore, the finality of the present action is urged to be premature.

In light of the noted incomplete/ambiguous rejection of claim 7 and the new grounds of rejection for claim 8, Applicants respectfully request that the Examiner withdraw the finality of the current office action in order to present a complete rejection relative to claim 7 and to allow the Applicants an opportunity to further address the new grounds of rejection of claim 8.

### **B. Summary of Rejections**

Claims 1 and 14 were rejected under 35 U.S.C. §103 as being unpatentable over Rodriguez (U.S. Patent 4,622,627) in combination with Cama et al. (U.S. Patent 6,211,457). Dependent claims 2-6, 9-13 and 17-21 were rejected under 35 U.S.C. §103 over Rodriguez et al. (U.S. Patent 4,622,627) in combination with Cama et al. (U.S. Patent 6,211,457), Wong (U.S. Patent 6, 456,511). Claim 7 was rejected under 35 U.S.C. §103 over Rodriguez et al. (U.S. Patent 4,622,627) in combination with Nakamura et al. (U.S. Patent 4,906,208). Claim 7 is also rejected under 35 U.S.C. §103 over Rodriguez et al. in combination with Nakamura et al. (U.S. Patent 4,906,208). Claim 8 is rejected under 35 U.S.C. §103 over Cross (U.S. Patent 5,615,097) in combination with Rodriguez et al. (U.S. Patent 4,622,627).

### **C. Rejection under 35 U.S.C. §103 over Rodriguez in View of Cama et al.**

Claims 1 and 14 were rejected under 35 U.S.C. §103 as being unpatentable over Rodriguez (U.S. Patent 4,622,627) in combination with Cama et al. (U.S. Patent 6,211,457). This rejection is respectfully traversed.

In suggesting the motivation for combining Rodriguez et al. with Cama et al., the Examiner alleges that it would have been obvious to “one having ordinary skill in the [sic] at the time the invention was made” to modify the power supply of Rodriguez et al. by the technique taught by Cama et al. for the purpose of securing firm connection with external devices.

The Examiner failed to demonstrate the required clear basis in the art for combining Cama et al. with Rodriguez et al. The Examiner argues that the motivation for combining Cama et al. with Rodriguez et al. would be for securing firm connection with external devices. However, neither Rodriguez et al. nor Cama et al. teaches a problem with an AC connection, let alone the desirability of using a communications interface (Cama et al. Column 2, line 4 to Column 3, line 20) to secure a firm connection with AC terminals of a power converter (Rodriguez et al., Column 5, line 33-34 and 54).

Rodriguez et al. fails to teach using a communications interface to secure a firm connection with the AC terminals of a power converter to connect to the house power. Instead, Rodriguez et al. merely teaches that the power converter has AC terminals (Rodriguez et al., Column 5 lines 33-34 and 54) to receive a connection to the house power. Since Rodriguez et al. fails to teach the need for securing a firm connection or the possibility of using a communications interface as taught by Cama et al., one of ordinary skill would not have been motivated to modify Rodriguez et al. or to seek out the teachings of Cama et al.

Cama et al. also fails to teach using a communications interface to secure a connection with AC terminals. Instead, Cama et al. merely teaches an EMI shielded communications interface (Cama et al., Column 2 line 4 to Column 3 line 20). Since Cama et al. fails to teach the desirability of using a communications interface for the AC terminals of a power converter, one of ordinary skill in the art would not have been motivated to combine the teachings of the respective patents, or even recognize a need to securely attach the AC terminals. The Examiner has not asserted any other information to support the basis for the proposed combination. Absent such a teaching

or suggestion of a combination, it is improper to combine Rodriguez et al. with Cama et al. under 35 U.S.C. §103 because such teachings fail to suggest or otherwise motivate one of ordinary skill in the art to seek to combine the teachings (MPEP § 2143.01(I)).

Applicants respectfully maintain that it is also impermissible to combine the teachings of Cama et al. with the teachings of Rodriguez et al. under 35 U.S.C. §103 as Rodriguez et al. and Cama et al. are in non-analogous art categories. Rodriguez et al. is directed to the field of power converters (Rodriguez et al., Column 1, 27-40) whereas Cama et al. is directed to the field of EMI shielded communications interfaces (Cama et al., column 2 line 4 to 3 line 20). MPEP 2143.01 (II) states:

The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered **to the extent that they are in analogous arts**. [Emphasis added]

The Examiner is respectfully requested to reconsider and withdraw the rejection under 35 U.S.C. §103 based upon the improper combination of Rodriguez et al. and Cama et al.

Considering, *in arguendo*, a combination as the basis for rejection of claims 1 and 14, it is noted that the proposed combination of Rodriguez et al. and Cama et al. would still fail to teach all the limitations of claim 1 and claim 14. As set forth above, independent claim 1 recites an electronic power converter for supplying direct current power output from alternating current power input, comprising: an encapsulated portion including at least high-voltage electronic circuitry where components of the at least high-voltage electronic circuitry are coated with an encapsulating high-dielectric material that is substantially free of voids to prevent breakdown; and an integrated connector for receiving a detachable alternating current line cord, the alternating current line cord having at least two wires therein; where the power converter is mountable on a printed circuit board.

Rodriguez et al. fails to teach, as acknowledged in the rejection, an integrated connector for receiving a detachable alternating current line cord, the alternating current line cord having at least two wires therein as set forth in claim 1. However, Rodriguez et al. also fails to teach a power converter mountable on a printed circuit board as set

forth in claim 1. Rodriguez et al. specifically teaches mounting the power supply to a chassis wall, not a printed circuit board (Rodriguez et al. Column 4 lines 38-44). It is further urged that Rodriguez et al. fails to teach all the recited limitations, such as components of the high-voltage electronic circuitry coated with an encapsulating high-dielectric material that is substantially free of voids to prevent breakdown as set forth in claim 1. While Rodriguez et al. does teach that the power supply can be potted (Rodriguez et al., Column 4, lines 44-52), the specific limitations set forth in the claim are not believed to be disclosed.

Cama et al. teaches an EMI shielded connector (Cama et al., Column 2, lines 16-24, 41-46, 55-60), that is mounted in the housing of a device (Cama et al., Column 2 lines 55-58). However, Cama et al. does not teach or suggest that the connector is integrated with a power converter. Cama et al. lists several examples of external devices intended to use the EMI shielded connector under the exemplary embodiment of a digital camera transmitting picture data to an external device. Applicants urge that the recited use and the field of art of the disclosure of Cama et al. is a data communication interface (Column 3 lines 1-20). Thus, Cama et al. fails to teach an integrated connector for receiving a detachable alternating current line cord, or that the alternating current line cord has at least two wires therein, as set forth in claim 1.

Rodriguez et al. and Cama et al., both individually and in combination, fail to teach, suggest or render as obvious the subject matter as set forth in independent claim 1. Therefore, the Examiner is respectfully requested to reconsider and withdraw the rejection under 35 U.S.C. §103.

As set forth above, independent claim 14 recites an electronic device, including: at least one circuit board located within the device; a cover enclosing the electronic device; and an electronic power converter including fully encapsulated electronic circuitry, the circuitry coated with an encapsulating material, the encapsulating material having thermal conductivity and a high dielectric constant; and an integrated connector, accessed through an aperture in the cover, for receiving a detachable alternating current line cord, the alternating current line cord having at least two wires therein, wherein the power converter is mounted on the circuit board.

Rodriguez et al. fails to teach an integrated connector, accessed through an aperture in the cover, for receiving a detachable alternating current line cord as set forth in claim 14. Rodriguez et al. also fails to teach a power converter mounted on a printed circuit board as set forth in claim 14. As described above, Rodriguez et al. teaches mounting the power supply to a chassis wall (Rodriguez et al. Column 4, lines 38-44), not a printed circuit board. As noted above relative to claim 1, Rodriguez et al. further fails to specifically teach circuitry coated with an encapsulating material having thermal conductivity and a high dielectric constant as recited in claim 14.

Cama et al. also fails to teach an integrated connector, accessed through an aperture in the cover, for receiving a detachable alternating current line cord, the alternating current line cord having at least two wires therein, as set forth in claim 14. While, Cama et al. teaches an EMI shielded connector (Cama et al., Column 2, lines 16-24, 41-46, 55-60), mounted in the housing of a device (Cama et al., Column 2, lines 55-58), Applicants respectfully urge that such a connector is not integrated into a power converter.

In summary, the arguable combination of Rodriguez et al. and Cama et al., either individually or in combination, fails to teach, suggest or render obvious the subject matter as set forth in independent claim 14. Therefore, the Examiner is respectfully requested to reconsider and withdraw the rejection under 35 U.S.C. §103.

**D. Rejection under 35 U.S.C. §103 over Rodriguez in Combination with Cama et al. and in further combination with Wong**

Dependent claims 2-6, 9-13 and 17-21 are rejected under 35 U.S.C. §103 over Rodriguez et al. (U.S. Patent 4,622,627) in combination with Cama et al. (U.S. Patent 6,211,457) and in further combination with Wong (U.S. Patent 6, 456,511). It is noted, at the outset, that claim 2 depends from claim 1, which is allowable for reasons explained *supra*; claim 17 depends from claim 14 which is also allowable as explained *supra*; and claims 9-13 depend from claim 8 which is allowable as explained *infra*. Therefore, dependent claims 2, 9-13 and 17 are also allowable. Applicants respectfully incorporate the arguments presented relative to the independent claims as though specifically repeated herein.

The Examiner alleges Rodriguez et al. in combination with Cama et al. discloses subject matter explained in claim 1 except for the utilization of the technique for an inrush current limiting circuit, a rectifier, a MOSFET, a capacitor, a resistive charging, zero threshold, and a resistive connection. To meet this deficiency, the Examiner proposes to modify the arguable combination with Wong's power supply topology. As the basis for the proposed combination, the Examiner urges a "purpose of providing a power supply to provide protection to [sic] user" (Office Action, p. 3, lines 15-18). Yet the Examiner has not indicated where such a suggestion is found in the patents relied upon, nor why protection of a user would be important when the devices disclosed appear to intended for mounting within a chassis that, by Applicants' understanding would preclude user access. What protection is afforded to the user, and why would that have been a motivation to combine the patents relied upon? Absent such evidence of obviousness, it is apparent that the basis for the alleged combination is Applicant's claims themselves, used as a recipe from which to select elements from unrelated patents to construct the rejection in hindsight. Applicants respectfully contend that absent a basis for the combination, *prima facie* obviousness has not been established.

It is noted that this same motivation for combining references, albeit different references, was postulated by the Examiner in the previous Office Action of June 15, 2006. In the response of September 15, 2006, the Applicants also respectfully requested that the Examiner identify the teaching relied upon to support the proposed motivation. Notably, no such response has been provided by the Examiner.

Considering, *in arguendo*, the combination of Rodriguez et al. in combination with Cama et al. and Wong, for the rejection of claims 2-6, 9-13 and 17-21, Applicants urge that the teachings of Wong are contrary to a principle of operation of claims 2, 9-13 and 17. Claims 2, 8 and 17 recite, in pertinent part, an inrush current limiting circuit, said inrush current limiting circuit, including: a bridge rectifier with a direct current return path, a MOSFET switch connected to the direct current return path of the bridge rectifier, a capacitor which is charged via a current limited source, a voltage level detection circuit to maintain the MOSFET switch in an off state until a line voltage reaches a near zero threshold, a resistive charging path to turn the MOSFET switch to an on state once the line voltage reaches the near zero threshold and a resistive

connection to a housekeeping supply of the power converter which maintains the MOSFET switch in the on state. Claims 9-13 depend from claim 8 and thereby also incorporate the subject matter of claim 8 by reference.

The Examiner recognizes that Rodriguez et al. fails to teach the utilization of the technique for an inrush current limiting circuit, a rectifier, a MOSFET, a capacitor, a resistive charging, zero threshold, and a resistive connection. Wong also fails to teach such limitations. Moreover, the teachings of Wong are contrary to a principle of operation of claims 2, 9-13 and 17 because Wong teaches “the primary side 102 includes a switching transistor 75, preferably an N-channel enhancement mode power metal-oxide-silicon field effect transistor (MOSFET), having a drain electrode connected to one side of the primary winding 91 and a source electrode connected to primary side ground return,” (Wong, Fig. 2, Column 5, lines 60-65). It is clear that the MOSFET of Wong lacks active circuitry to limit the inrush current as set forth in claims 2, 9-13 and 17 and is connected to a ground return instead of “the direct current return path of the bridge rectifier” as set forth in claims 2, 9-13 and 17. Therefore, not only is Wong contrary to the principle of operation as set forth in claims 2, 9-13, it does not disclose all the elements of those claims. Applicants respectfully maintain that the proposed combination fails to disclose all the elements of claims 2, 9-13 and 17, and the Examiner is respectfully requested to reconsider and withdraw the rejection under 35 U.S.C. §103.

**E. Rejection under 35 U.S.C. §103 over Chen in combination with Rodriguez in further combination with Nakamura**

Claim 7 is rejected under 35 U.S.C. §103 over Rodriguez et al. (U.S. Patent 4,622,627) in combination with Nakamura et al. (U.S. Patent 4,906,208). The detail of the rejection, however, alleges that “Chen et al.” (***possibly 6,317,324 ?***) discloses an encapsulated power converter as claimed, yet “Chen et al.” is not set forth as a basis for the rejection. To support the obviousness rejection, the Examiner urges it would have been obvious to combine “Chen et al.” and Nakamura et al. even though the rejection does not refer to Chen et al. in the caption of Section 4, rather the rejection appears to rely upon Rodriguez et al. No basis is set forth for the combination of Rodriguez et al.



and Nakamura et al. as set forth in the caption to the rejection. In light of the confusing references to both Rodriguez et al. and “Chen et al.” Applicants respectfully request that the Examiner either withdraw the rejection or provide a rejection “stating the reasons for such rejection, or objection or requirement, together with such information and references as may be useful in judging of the propriety of continuing the prosecution of his application” (35 U.S.C. 132(a)), such that Applicants are able to understand the rejection and respond thereto. In the event that the rejection of claim 7 is maintained, Applicants respectfully request that the rejection specifically identify those patents relied upon for the teachings alleged in support of the rejection, and that Applicants be permitted an opportunity to respond to such rejection as requested above.

Furthermore, Applicants submit that Rodriguez et al. fails to teach an electronic encapsulated power converter having threaded mounts extending from the case where the threaded mounts are earth grounded and allow the converter to be rigidly mounted to a circuit board, as set forth in claim 7. Instead, Rodriguez et al. teaches a power converter mounted on a chassis wall rather than a printed circuit board (Rodriguez et al., Column 4, lines 38-44).

Nakamura et al., teaches a connector adapted to mount on a circuit board (Column 3 lines 4-5) and, although suggesting that the connector may be mounted using a screw, fails to teach an electronic encapsulated power converter having threaded mounts extending from the case where the threaded mounts are earth grounded and allow the converter to be rigidly mounted to a circuit board, as set forth in claim 7. Since Rodriguez et al. and Nakamura et al. fail to disclose all elements set forth in claim 7, and since the Examiner failed to provide a clear basis for the rejection the rejection is respectfully traversed and the Examiner is respectfully requested to reconsider and withdraw the rejection under 35 U.S.C. §103.

#### **F. Rejection under 35 U.S.C. §103 over Cross in combination with Rodriguez**

Claim 8 is rejected under 35 U.S.C. §103 over Cross (U.S. Patent 5,615,097) in combination with Rodriguez et al. (U.S. Patent 4,622,627). The Examiner urges that Cross discloses the claimed subject matter of claim 8 except the utilization of the technique for an encapsulated current limiting circuit and power converter, but that

Rodriguez et al. teaches the utilization of a similar technique for an encapsulated current limiting circuit and power converter. The Examiner alleges it would have been obvious to one of ordinary skill at the time of the invention to modify the power converter of Cross by encapsulation for the purpose of improved mechanical integrity, power density and thermal performance. This position by the Examiner is respectfully traversed.

As set forth above, independent claim 8 recites an encapsulated alternating current to direct current power converter having an inrush current limiting circuit, including: a bridge rectifier with a direct current return path, a MOSFET switch connected to the direct current return path of the bridge rectifier, a capacitor which is charged via a current limited source, a voltage level detection circuit to maintain the MOSFET switch in an off state until a line voltage reaches a near zero threshold, a resistive charging path to turn the MOSFET switch to an on state once the line voltage reaches the near zero threshold, a resistive connection to a housekeeping supply of the power converter which maintains the MOSFET switch in the on state, wherein said current limiting circuit is encapsulated with the power converter.

The Examiner states that Cross “does not disclose the utilization of the technique for an encapsulated current limiting circuit and power converter.” Again, the Applicants agree that the claimed inrush current limiting circuit is not disclosed. More specifically, Cross teaches that a MOSFET is normally on until a high voltage is reached (Cross, Column 5, lines 30-31), instead of the voltage level detection circuit set forth in claim 8.

With respect to Rodriguez et al., the Examiner previously admitted that Rodriguez et al. fails to teach an inrush current limiting circuit. As the Examiner states in Part 3 of the Office Action of October 19, 2006, “Rodriguez et al. in combination with Cama et al. disclose the claimed subject matters [sic] as explained in claim 1, above, except the utilization of the technique for a inrush current limiting circuit, a rectifier, a MOSFET, a capacitor, a resistive charging and a resistive connection.” The Applicants agree that Rodriguez et al. fails to teach the claimed current limiting circuit. More specifically, Rodriguez et al. fails to even mention an inrush current limiting circuit. Nevertheless, the Examiner subsequently alleges, in Part 5 of the same Office Action that Rodriguez et al. teaches the utilization of a similar technique for an encapsulated

current limiting circuit and power converter. The Applicants respectfully request that the Examiner specifically point out where Rodriguez et al. teaches an inrush current limiting circuit as set forth in claim 8.

In summary, Cross and Rodriguez et al., either individually or in combination, fail to teach, suggest or render obvious an inrush current limiting circuit as set forth in independent claim 8. Therefore the Examiner is respectfully requested to reconsider and withdraw the rejection under 35 U.S.C. §103.

### **CONCLUSION**

In view of all the reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw the present rejections. Also, an indication of allowability is earnestly solicited.

Respectfully submitted,



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